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the Cannon

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Celebrating 125 years of engineering

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Reflect on Achievements of Black Engineers

Dwayne Shirley
MMS 0T0

February is internationally recognized as Black History Month. Its intent is to provide a special time each year when the accomplishments and advancements of Blacks in all areas of human endeavor are brought to the forefront of our attention.

Of all areas of human endeavor engineering and practical ingenuity have been active areas of major contribution by Blacks. Although the identity of the inventor is often lost in the sea of time, the impact and utility of these developments plays as much a role today as ever before.

Although too numerous to mention in its entirety, the prestigious list of Black engineers includes Canadian-Born Mechanical Engineer, Elijah McCoy (1843-1929). In 1872 he was granted the first patent on the automatic lubricator, making it possible to oil machines without halting operations. Another prolific force advancing the transportation and communications industries was American Granville Woods (1856-1910). In 1884 he secured the first patent for a furnace and boiler system to produce steam heat. In following years he developed the streetcar, the "third rail" system for an electric locomotive, an improved airbrake system and a telegraph system for communicating between moving trains that improved railroad safety.

In more recent times American Mechanical Engineer Lonnie Johnson (1949-) served as a research engineer for NASA developing the Voyager, Mars Observer and Galileo spacecraft. While working with the Strategic Air Command in 1982 he ingeniously developed and patented the flow-actuated pulsator... more commonly know today as the Super Soaker.

These developments along with many others unmentioned have enhanced our standard and quality of life. In the spirit of the great Black Engineers the National Society of Black Engineers (NSBE) has set its primary mission to increase the number of culturally responsible Black engineers excelling academically, succeeding professionally and positively impacting the community. To learn more about a new NSBE chapter starting here at Skule™ email Dwayne Shirley (shirley@ecf.toronto.edu) and visit the national website: http://www.nsbe.org

F!rosh Hardhats Get Deflowered

Chris Peressotti
EngSci 0T1

After a disappointing showing from the class of 0T1 last year, the F!rosh of 0T2 more than doubled last year's turnout for the annual F!rosh Hardhat Decorating Competition during Godiva Week '99. Calculus Races, a Paper Darts Competition, and other random events (boat race? What boat race?) preceded the judging by head judge (and Blue and Gold Chair) Sean Voskamp, working with assistant judges Tim Christie and myself. First, I must commend the F!rosh who have caught on to the time-honoured tradition of bribes at such an early age; I am forever grateful. Although it was difficult to choose between hardhats that featured disco-balls, beer-level detectors, and ever-popular flashing LEDs, the top three hardhats were chosen as follows:

3rd: Based almost totally on the quantity of his bribes, Adam the Comp 0T2 with his drunk-guy theme.

2nd: A guy with a hardhat that stands the test of time (I swear it's been decorated since the second week of Skule!) Paul the Mech 0T2 with a very cool rubbery-monster-face-thingy.

1st: The grand prize went to Jenni the Indy 0T2 with electronic car-racing action mounted directly onto her hardhat, featuring a spinning Molson sign. (Yes Jenni, we get it, Molson INDY, geez).

Thanks to everyone who took the time to decorate their hardhat and came out for the judging. It's great to see the spirit increasing, keep it up during the rest of your years in Skule.

Notice of Referendum

Julie Wilkinson
EngSoc Administration

Two years ago, the then undergraduate Engineering students voted in a referendum to initiate the Engineering Career Office, and to fund it by collection of $25 per student fee, per year, for two years. After two years there would be another referendum to determine the future of the Engineering Career Office.

During 1997-1998, the Engineering Career Office was funded solely by the undergraduate Engineering students. For 1998-1999, the Vice-President and Provost of the University, Adel Sedra, kindly agreed to match the students' contribution by 50%, increasing funds available for the Engineering Career Office to provide better and broader service.

At the January 1999 Full Council meeting, Council voted in favour of asking the following referendum question during the March elections:

"Do you support the continued collection of $25 per student fee, per year, for the next two years to be used solely to fund the Engineering Career Office, whose mandate is to find employment opportunities for undergraduate Engineering students?"

The question will be asked on Thursday March 18, and Friday March 19, during Engineering Society elections.

the Cannon

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and

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Please Note
The Cannon is a medium through which undergraduate engineering students can express their opinions. The views expressed heirein are those of the author and do not necessarily represent those of the editors or the Engineering Society unless so indicated.

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Editorials & Opinions...

From the Editor
Arnold Choi

Arts and Entertainment

My father said one thing, and I thought about nothing else for years.

Looking at the section headings of the Globe and Mail (Canada's National Newspaper(tm)), he attempted a rationale for the title "Arts and Entertainment." His definition, voiced to me with great confidence, was that "entertainment" was anything that made you happy, while "art" was anything that made you sad. Hence the heading, which covered all the bases, and illustrated all the various directions from which people throw the word "art" at us.

Ever since that day in February 1996, I cannot encounter the word "art" without attempting to rationalize my intuitive rejection of his definition. The moment he said it, something struck me as incredibly misdirected. But it was a feeling I have failed to describe for many years. I have an honest sympathy for the artistic concept; one of which anyone is capable; but I don't see many people allowing it to surface. And the amount of art we lose because of people's cynicism disturbs me.

But my father is not that simple. His definition included not only sadness, but all emotions. In fact, he said that art also caused happiness, and entertainment was merely that art which did. Yet, I did and do not agree.

Instinctively, the definition was too broad. For example, I can be awed by a flock of geese flying a V over a frozen landscape, and I can even be made happy, sad, or dismayed at my inability to fly, but I wouldn't call that art. If a baby smiles at me, I can be proud that I kick that much ass with babies and go around all day thinking what an awesome father I'd make, but I still don't call that art. According to my father, if a rabid dog bites my leg off, my anger is a response to an artistic masterpiece. That just fails to make the cut.

Over the years, I have taken every encounter with art to try to construct my own definition. One of my first vocal attempts, spewed drunk in an English pub, that art was "anyshhing anyone doeszzzz..." was a freakshow; stopped the conversation dead. But I was living with an artist who bewildered our other flatmates by trying to explain that crossing out the numbers on every page of a dictionary was a masterpiece. Clearly, no matter how many pints I had had in me, the discussion had demanded my steady hand.

"Anything anyone does..."

Rave of a drunk man. My company thought I had neither the tools nor the business entering that particular conversation. However, on the topic of page numbers, neither could they reach a conclusion of their own.

And that brings us the fundamental problem: No matter how much we talk about page numbers, geese, eggs, clocks, smiles, physics, psychics, chickens, salt-shakers, novels, or naked breasts, we are nothing if not more confused whether any or all of those things can be termed "art." I ask, would we not be better off able to talk about this particular concept?

My father then said that our well-earned freedom demands that we can adapt the language to whatever we find most appropriate for our age. The implication is that in our "age," art is different from that of other ages. This thinking is typical of those caught up in our computer-craze, in which people believe that our increasingly complex technology indicates a sudden explosion of intelligence some 40-odd years ago.

In truth, our exponential advancements in technology are accompanied by an exponential decay in speech. Just look at a technical manual. When you invent a complex technology, likely based on other complex technologies, it is useless until you can communicate it. Nowadays, people assume that it's okay to keep the language of economics, computers, or programmable VCRs to the engineers that invent them. But the communities that understand the increasingly specialized language are shrinking.

If only its inventor understands the smartest computer in the world, can the rest of us use it? Is it therefore useful?

It is more essential than ever to understand art. Advancing technology must be accompanied by advancing communication, not by terminology that fewer and fewer people must spend more and more years struggling to understand. Art, the perfect use of any medium, is a simplification of ever-branching technology.

Art is anything any human being does perfectly. Any action performed; any medium utilized. Why do stories refer to "the shoemaker's Art?" Why do we constantly discover that certain people can make reading, studying, or even science into "an art?" Because that's the meaning of the word: effortless perfection.

Our society's modern cynicism prevents us from accepting the existence of a thing that defies physics. Art is a human ability that can produce Mt. Rushmore, Michaelangelo's David, the Coliseum, the Pyramids, all with no relation at all to the work required. For no reason whatsoever, we have this ability to get things done, 100% perfectly, as long as we have come to understand their medium. Sadly, the deterioration of language, the lack of faith in words, is decreasing the population who believe in this power. It takes a large community to buoy your faith in something irrational; if we can't talk about art, we may lose it completely.

"I Wonder Where It Is?"

Wendy Tam
CompEng 0T3

Hello, I'm a first year Computer Engineering student. I have read The Cannon a few times and find it to be a very well-rounded newspaper. I read in the Frosh handbook that unsolicited submissions, opinions or otherwise, could be submitted to this address, which is why I'm writing.

I greatly admire the person who returned the lost wallet at the Eaton Centre to its owner. After my own experience with losing my wallet, I cannot believe that such an honest and virtuous person actually exists.

I lost my wallet two weeks ago in Copywell Copy Centre at College Street & King's College Road, but was not fortunate enough to have it returned to me. In fact, I now realize that honesty should not be taken for granted.

Recently, I bumped into a classmate who was also at Copywell at the time I lost my wallet. It turned out that she found my wallet lying on the counter, but assumed I would return looking for it so she gave it to the blonde 40-ish lady behind the counter (she was the only female employee working there at the time). The moment I realized I lost my wallet, I immediately returned to Copywell in less than forty minutes. I described my wallet to the 40-ish blonde woman behind the counter and asked if she had seen it lying on the desk anywhere. However, she claimed she did not see a wallet, and even suggested, after I aimlessly scanned the copy centre, that "perhaps one of my friends picked it up for me."

Needless to say, when my classmate informed me that she had given my wallet to the same lady, we immediately went to Copywell where I explained my situation to the manager, who asked the lady if she had seen such a wallet since my classmate explicitly stated that she gave it to her. The blondish woman thus attempted to look for it behind the counter while saying things like "I put it somewhere here, I don't know where it went".

I retorted that when I asked her two weeks ago if she had seen a wallet, she claimed there was none lying around. Her "argument" was that she was given a "guy's wallet" that had three compartments (which my wallet had) with a student ID photo of a "guy." Although she cannot make the simple distinction between a guy's and girl's wallet and appears to be completely oblivious to the fact that student ID cards have NAMES on them and that a girl can have short hair, her response shows a few things: She obviously looked at one of the many cards in the wallet; she saw the U of T student card, but the thought of returning it to U of T, conveniently located right across the street, did not occur to her at all, even after two weeks.

I was already mad at myself two weeks ago for being so careless with my wallet, but this incident infuriated me even more. Perhaps my view is too idealistic, but I had always assumed that the majority of normal human beings would have some degree of an inherent "honour system." Unfortunately, at the expense of my wallet, I have experienced the realization that it is possible for "honour systems" to be dormant due to greed and inconsideration.

I have talked to the police about this, and they still consider my wallet to be "lost."

I wonder where it is?

Fish & Chips Blue & Gold

Michelle Park

As part of the Godiva week festivities, the fourth annual Mr. Blue and Gold pageant took place in the Atrium on Wedesday, January 13, 1999. The pageant showcases what engineers are really made of. The male engineers who participate make an entrance, strip down to their boxers and have their masculinity tested before a panel of judges. This year there were seven entries who braved the crowds and strutted their stuff before the seven female engineers who judges their performance.

All the contestants were spirited and entertaining. Dan Siegal was a good sport and demonstarted what the proper technique for tasting fruit is. Sean Voskamp made his entrance by rappelling from the third floor James Bond-style. A last minute entry by a F!rosh foursome included a well received synchronized dance. Participants also included Alex Ross, Christian Vandergrift and a joint effort from Eng-Soc executives Struan Vaz and Rono Sinha.

Other memorable moments include the presentations of very exotic gifts to the MC and a judge as well as cameo appearances from the head of Bob's Fish 'n Chips and the past three years of winners. The judges were all kept very "happy" with gifts of abundant chocolate and alcohol.

And the winner is... Sean Voskamp! Sean was crowned Mr. Blue and Gold with a blue and gold hardhat and as in past years has earned the right to drop his pants at any skule gathering, event or function. Second and third runners-up were Dan and the partnered entry of Struan and Rono respectively.

All in all, the event provided an afternoon good-natured and mostly wholesome engineering fun.

Do you have something to sell?

Do you have something you want to buy?

The Cannon will be creating a Classified section for all members of the Engineering Society in the issues to come.

You can submit your ad by dropping it off in the Cannon mailbox, or email it to cannon@skule.ca.

Please include: Name, Phone Number, Email Address, Program/Year.

Your message (excluding your personal information) should not exceed 300 characters.

Election Special

The following articles outline the rules and regulations for the upcoming Engineering Society Campaign Elections, and descriptions of the Executive Positions available on the Council.

Engineering Society Election Rules

1. Election Week shall be the third full week of March (March 15th - 19th, 1999).
2. Nominations shall open at 9 am on Monday February 22nd, 1999 and close at **noon** on the Friday immediately preceeding Election Week (March 12th, 1999).
3. Each candidate shall present a nomination form containing the signatures of twenty-five (25) Society Members, an acceptance of nomination and a bond of ten dollars ($10). The bond shall be returned if the candidate withdraws with good cause or is not disqualified, upon removal of all campaign material.
4. Campaigning shall not commence until 9.00 am on the Monday of Election Week (March 15th, 1999) and shall close at 8.00 am on the Thursday of Election Week (March 18th, 1999). Posters only may be erected during non-polling hours on Thursday March 18th and Friday March 19th, 1999. For the purpose of distribution of the Election issue of the **Cannon** or **Toike Oike**, statements made therein will not be considered to be advance campaigning.
5. Each candidate's name may appear on a maximum of two hundred (200) posters of maximum size 8.5 inches by 11 inches. Posters associated with a candidate or in any way related to the candidate's election campaign must clearly bear the surname of the candidate.
6. Each candidate may post up to two (2) banners, for a total maximum area of four (4) m^2, determined by the exterior dimensions. Banners associated with a candidate or in any way related to the candidate's election campaign must clearly bear the surname of the candidate.
7. Posters and banners shall not be erected in the Engineering Society Offices or the Engineering Stores, excepting posters erected by the Chief Returning Officer (CRO) for the purpose of advertising the elections.
8. Posters and banners may remain erected from commencement of campaigning until 5.00pm on the Monday after Election Week. Failure to remove posters and banners by that time will result in loss of bond.
9. Candidates shall submit a statement to be published in the Election Issue of **THE TOIKE OIKE** or **CANNON** by noon on Friday March 12th, 1999. Any written material must be wordprocessed using WordPerfect or similar program and submitted on a disk that is IBM compatible with a hard copy of the material; photographs must be black and white positives. Each candidate shall be limited to two hundred and fifty (250) words and a single photo.
10. The facilities and resources of the Engineering Society shall be made equally available to all candidates for their campaign during regular office hours only, with the provision that Society business shall take precedence over campaign business. The Office facilities shall not be used for campaign business outside office hours. Use of the dark room shall be coordinated by the Communications Chairman.
11. The CRO shall have sole authority to advertise Election Week.
12. The Society shall reimburse expenses of up to $ 15.00 per candidate, provided that the candidate receives over 10% of the votes cast for his/her election and receipts are provided.
13. The polls shall be open from 10.00 am to 6.00 pm on the Thursday and 10:00 am to 3:00 pm on the Friday of Election Week (March 18th and 19th, 1999).
14. Except for the purpose of personally casting a ballot, candidates may not linger in the vicinity of the polling station. CRO has the authority to remove campaign material located within 10 feet of the Polling Station.
15. Elections shall be held by secret ballot. Candidates will be listed by sought position in alphabetical order of surname. Balloting procedure will be posted at the polling station.
16. Each candidate may have one scrutineer present when the ballots are being counted. Counting of the ballots will be conducted on the Friday of Election Week after polls close. Once the ballot boxes have been unsealed, no person shall leave the counting room until the final results have been tabulated. The official results must be posted in the Engineering Society Offices by noon on the Monday following Election Week.
17. Each candidate shall be personally responsible for the conduct of his/her campaign and his/her committee. The Society shall not accept liability for any actions of the candidates or their committees.
18. The CRO and two Deputy Returning Officers (DRO) appointed by Council shall be responsible for enforcing the rules as stated. Punitive actions which could be taken are:
    (1)warning the offending candidate
    (2)disqualification (if the candidate is deemed, by the CRO and at least one of the two DRO's to be in persistent or flagrant violation of election proceedings.)
19. A disqualified candidate shall not be permitted to run in a by-election for the same position, should the vote be declared invalid. Any complaint regarding election procedural irregularities shall be made in writing to the CRO by 5 pm on the Tuesday following Election Week. A written reply by the CRO shall be made no later than 24 hours after the complaint was received.
20. Complaints about the work of the CRO may be brought before the Engineering Society Council.
21. All appeals of the decisions of the CRO must be presented to the Engineering Society Council. This meeting of Council shall be held on Tuesday 30th March, 1999. Appeals of the decisions of the CRO may be made only by a candidate.
22. Other than through personal campaigning, class visits, posters and banners as specified above, and the statement in the Election Issue of **THE TOIKE OIKE** or **CANNON**, there shall be no other forms of campaigning through printed or electronic media. No material of a sexist or obscene nature shall be used.

7. OFFICERS

7.0.1 The Officers of the Society shall be the President, the Vice-President: External, the Vice-President: Finance, the Vice-President: Activities, and the Vice-President: Internal, all of whom shall be elected by the Members.

7.1 President

7.1.1 Any Member who has not previously held the Office of President is eligible for election to the Office of President provided that the Member is 18 years of age or older and will be registered in the Fourth Year of their Undergraduate program in Applied Science and Engineering in the September of their term of Office.

7.1.2 The President shall be the Chief Executive Officer of the Society responsible for giving direction to the Society.

7.1.3 The President shall have the power to call meetings of Council pursuant to the provisions of Clause 4.11.1.

7.1.4 The President shall preside at all meetings of the Executive Committee of Council.

7.1.5 The President shall be a voting Member of all Standing and Special Committees appointed by Council.

7.1.6 The President shall serve as the official representative of the Society on all suitable occasions.

*7.1.7 The President shall be specifically responsible for the Academic Affairs - E.F.C.R. Committee, the Computer Committee, the Climate in Engineering Committee, the Fourth Year Committee and the Women's Issues Committee.

7.1.8 The President shall have such other duties as may pertain to the Office.

7.2 Vice-President: External

7.2.1 Any Member who has not previously held the Office of Vice-President: External shall be eligible for the Office of Vice-President: External provided that the Member is 18 years of age or older.

7.2.2 The Vice-President: External shall assist the President in the discharge of the President's duties and shall deputize in the event of temporary necessity.

*7.2.3 The Vice-President: External shall be responsible for all matters external to the Society as well as selected internal activities as determined by the Officers.

*7.2.4 The Vice-President: External shall be responsible for ESSCO and CCES.

*7.2.5 Any members of the Society who attend a conference at the Society's expense must post a bond of $20.00 before leaving. Upon their return a written conference report must be submitted within two weeks where upon which the bond will be refunded.

*7.2.6 The Vice-President: External shall be specifically responsible for the Employment Committee, the High School Liaison Committee, the Professional Development Committee and the Communications Committee.

7.2.7 The Vice-President: External shall be a voting Member of all Standing and Special Committees appointed by Council.

7.2.8 The Vice-President: External shall serve as the official representative of the Society in the absence of the President.

7.2.9 The Vice-President: External shall have other such duties as may pertain to the Office.

7.3 Vice-President: Finance

7.3.1 Any Member who has not previously held the Office of Vice-President: Finance is eligible for election to the Office of Vice-President: Finance provided that the Member is 18 years of age or older.

7.3.2 The Vice-President: Finance shall assist the President in the discharge of his duties and shall be responsible for overseeing the Society.

*7.3.3 The Vice-President: Finance shall be responsible for overseeing all financial and administrative affairs of the Society.

7.3.4 The Vice-President: Finance, in conjunction with the Executive Committee, shall prepare three *budgets for Council Approval:*

a. a Spring Budget presenting a general overview of the planned financial priorities which shall be presented to the first Council meeting after the Joint Council meeting;

b. a Fall Budget containing detailed projections of planned revenue and expenditure which shall be presented at the second Council meeting of the fall term; and

c. a Winter Budget derived from the Fall Budget and revisions based on actual revenue and expenditures which shall be presented at the January Council meeting.

Any revisions of the Society's budgets must be approved by Council.

7.3.5 The Vice-President: Finance shall serve as the official representative of the Society in the absence of the President and Vice-President: External.

7.3.6 In accordance with The Corporations Act of Ontario, the Vice-President: Finance shall keep, or cause to be kept, proper books of account and accounting records with respect to all financial and other transactions of the Society and, without derogating from the foregoing, records of:

a. all sums of money received and disbursed by the Society and the matters with respect to which receipt and disbursement took place;

b. all sales and purchases of the Society;

c. the assets and liabilities of the Society; and

d. all other transactions affecting the financial position of the Society which books and records shall be kept at the Head Office of the Society and shall be open to the scrutiny of any Member of the Society upon request.

7.3.7 The Vice-President: Finance shall be responsible for the security of the financial records of the Society and for reporting the expenditures of the Society's funds in accordance with the budget approved by Council.

continued on page 4

Martin's Corner...

Mr. Beauregard, the Prof Terminator

Martin Jakubik
CompSci, University of Waterloo

The first thing you need to do to pass your digital design exam is get Charles Beauregard-Tellier in your class. You can't really expect to pass a course, after all, by plain hard studying or visits to the tutor's office. Some courses are just out to bury you without any regard for how much work you put in.

Naturally, not all courses are predators. Pretty much any frosh course, despite how much we complained at the time, is a cinch. Most of our worries centre around the fact that our averages are dropping, but with all the extra help we get we usually drain most of our time into drinking and running around flirting with all the co-eds that live on our floor. Then, of course, as you progress in years, you still encounter many profs who are eager to help you however they can. But every once in a while comes a course that is designed only to crack you open and spill you into the academic saucepan. It may come forewarned by elder generations, or it may spring to vengeance from the cold heart of a sadistic prof, but it is the course you can't pass.

That's when you need a temper. And the temper in our class raged inside the head of Mr. Beauregard, a student who decided not to take any bullshit from the powers that be.

It all began with our midterm. CS351 is an introduction to digital circuits for computer science majors at waterloo. Naturally, it opens slowly, with a a great deal of investigation into the same stuff we learned in about logic in high school. Arranging the wires properly in the pre-midterm lab was like playing with a Happy Meal.

Simple. Many had background in this from highschool, where they taught us logic gates and small, combinatorial circuits. Things didn't get much more complicated than this. That's why we were totally stunned by a midterm that asked us to scribe mealy-type state diagrams of a three-input circuit combined with its identical copies. We were paralyzed by karnaugh-map representations that were so different from our class notation that they prompted a hurried lecture by the supervising prof during the exam! We froze when the very first page of the exam requested in poor grammar that we decipher three codes the prof had mentioned with a causal wave of his hand in the first week of class.

Needless to say, the average with which we dragged our sorry asses out of the fourth floor examination chambers was no higher than a pathetic 43%. No matter how much anybody had hung onto the material presented in class, the questions on the exam were so irrelevant that wise-asses dropped 351 like flies, and it was natural to greet a classmate with a 'Did you fail the midterm?' only to be answered with a cheery 'Sure!'

Students were seen hurrying out of the midterm rooms to go home and weep over lost careers. The two-hour torture had been devastating.

However, the devastation climbed to another scale the next day in class, when we were greeted by the stern, charged glare of, shall we say... professor Volta, claiming that the co-operative failure was completely and unavoidably, our fault.

As if the lack of insightful questions with which we managed to impress our omniscient lecturer had anything to do with our dungeon of an exam. As if we could expect to sanely face questions that had nothing to do with anything we'd studied.

Charles wrote a letter of protest to the department chair. At first, he wasn't sure where to send his letter and showed it only to his friends. But he eventually got bolder and sent it to an advisor, who advised him to forward it to the chair. The letter contained complaints about the amount of time alloted for the exam, the lacking attention to grammar and spelling in the questions, the introduction of new or questionable notation, and material that had not been covered in class.

But the professor was very reluctant to drape the blame over anyone but his students. In fact, the most frustrating part of the experience was how we had studied our asses off, stressed over indecipherables that made us feel like clowns, and then been yelled at for failing.

"I do not have a good feeling about this class," Volta sparked. Despite the fact that we asked questions every lecture, he charged: "Your questions are not perceptive enough." And resorting to the dim, hypocrite's complaint that fails to connect how destructive the lecture format is to group interaction: "You don't provoke enough discussion."

We had to go another two months in agony, some of us expecting their doom if 351 dropped their cumulative average below the cut-off. And each day the chiding, cynical face of Volta came in to smoke us, we felt like children sent in to the room not to study, but to bear his scorn. Can there be any encouragment in being told that you are not up to standard? Can you have the confidence to learn new material from the face that has told you you haven't understood any brilliance he has emitted before?

There was no sign of help; no remorse. We were just told we had been bad and would recover to "a maximum of 60%" if we tried hard. Professor Volta resisted the common plea that the midterm had been too difficult: "You can expect your final exam to be just as hard..." Yet, at the same time, Charles' brilliant letter was working its way through the administration.

It was amusing, then, to watch how Volta's attitude flip-flopped toward the end of the course. All of a sudden, he appeared to us in a lecture claiming that he had already "said he was sorry" for the fiasco. Of course, the entire class felt a small injustice in being denied a real apology in this way, but also measured an amount of relief in the indication that an apology was in the works.

And what an apology it turned out to be. Perhaps that is why guilt is such a powerful thing. Perhaps it is best to do both instigator and victim a favour by surrendering an apology as soon as the crime is committed. Because it was guilt, bottled up by our professor for two months, that motivated two 3-hour review sessions on top of regular lecture illuminating the same questions we would come to see on the final exam. It was guilt provoked by Mr. Beauregard's letter that resulted in questions covered in a sequence suspiciously similar to the one we would later meet on the final.

The exam itself was absurdly easy compared to the midterm. In a course known for its challenging material, writing the final this term was like changing a lightbulb. All one had to do was come to the review sessions, and the course was in the bag. Smiles beamed as careers were rescued in its wake.

After all, when a whole class fails an exam, something is wrong with the exam. But the worst thing a prof can do is blame the failure on the dimness of his students. The entire class has Charles' letter to thank for speaking out when we had been struck dumb. It is sad when stale material upsets the academic balance of a university, but it is the greatest relief when a sharp student can realize and repair a system that has burnt out.

Martin Jakubik is a Fourth Year Computer Science student at the University of Waterloo. He is currently at the University of Acadia pursuing a second undergraduate degree in English.

You can find his column in the Cannon every month. You can also find more written work on the internet at: www.ecf.utoronto.ca/~choi/firstperson.htm/

continued from page 3

7.3.8 The Vice-President: Finance shall be responsible for security of the Engineering Society offices and to investigate any irregularities should they arise.

7.3.9 The Vice-President: Finance shall oversee the operation of the Engineering Stores.

7.3.10 The Vice-President: Finance shall make a report, at all regular meetings, to Council and to the Executive Committee of Council of the Society's financial position including:

a. a comparison of actual income and expenses pertaining to the budget; and

b. a statement of expected income and expense.

7.3.11 The Vice-President: Finance shall, within the two weeks following each May 31st, submit the Society's accounts and the year-end financial statements to the Auditors and shall present the Auditor's Report at the Annual General Meeting of the Members in October.

7.3.12 The Vice-President: Finance shall have such other duties as may pertain to the Office.

7.3.13 The Vice-President: Finance shall be a voting Member of all Standing and Special Committees appointed by Council.

7.4 **Vice-President: Activities**

7.4.1 Any Member who has not previously held the Office of Vice-President: Activities shall be eligible for the Office of Vice-President: Activities provided that the Member is 18 years of age or older.

7.4.2 The Vice-President: Activities shall assist the President in the discharge of the President's duties and shall be responsible for overseeing the Society.

7.4.3 The Vice-President: Activities shall chair the Orientation Review Committee which will conduct a review Orientation, to be completed by December. It will be composed of at least a student survey and written report to be presented to the Engineering Society Full Council and the Faculty.

7.4.4 The Vice-President: Activities shall be responsible for all social and athletic events of the Society in addition to other events shared with the Vice-President: External.

7.4.5 The Vice-President: Activities shall be a voting Member of all Standing and Special Committees appointed by Council.

7.4.6 The Vice-President: Activities shall serve as the official representative of the Society in the absence of the President, the Vice-President: External and the Vice-President: Finance.

*7.4.7 The Vice-President: Activities shall be specifically responsible for the Blue and Gold Committee, the First Year Committee, the Orientation Committee and the Social Committee.

7.4.8 The Vice-President: Activities shall have such other duties as may pertain to the Office.

7.5 **Vice-President: Internal**

7.5.1 Any Member who has not previously held the Office of Vice-President: Internal shall be eligible for the Office of Vice-President: Internal provided that the Member is 18 years of age or older.

7.5.2 The Vice-President: Internal shall assist the President in the discharge of the President's duties and shall be responsible for overseeing the Society.

7.5.3 In accordance with the provisions of the Corporations Act of Ontario the Vice-President: Internal shall keep, or cause to be kept:

a. a copy of the letters patent and of any supplementary letters patent issued to the Society;

b. all By-laws and special resolutions of the Society;

c. a register of Members in which are set out the names with addresses, alphabetically arranged, of all persons who are or who have been within the preceding ten years, Members, Ex-Officio Members and Affiliate Members;

continued on page 5

continued from page 4

d. a register of Councillors in which are set out the names, addresses and callings of all persons who are or have been Councillors of the Society together with the several dates on which each became or ceased to be a Councillor.

7.5.4 The Vice-President: Internal shall issue notices of meetings of the Members, of the Council and of the Executive Committee of Council and shall prepare an agenda for each meeting and shall take, or arrange to have taken and preserved in a minute book kept for that purpose, full and accurate records of the minutes of the Full Council and the Executive Committee of Council.

7.5.5 After approval thereof by the Members, the Council, or the Executive Committee of Council, the Vice-President: Internal and the President shall sign the minutes of the previous meeting.

7.5.6 The Vice-President: Internal will also be responsible for maintenance of the Society's bulletin boards and the procurement of refreshments for all Council meetings.

7.5.7 The Vice-President: Internal shall be specifically responsible to co-ordinate the membership of the Standing Committees pursuant to Sub-Section 5.2 (Membership).

7.5.8 The Vice-President: Internal shall be specifically responsible to administer year-end reports by all outgoing Appointees and Executive Committee Members at the end of their term of Office. These year-end reports are to presented at Joint Council, to ensure continuity and to ensure an ongoing review of these Offices.

7.5.9 The Vice-President: Internal shall serve as the official representative of the Society in the absence of the President, the Vice-President: External, the Vice-President: Finance and the Vice-President: Activities.

*7.5.10 The Vice-President: Internal shall be specifically responsible for the Web Site Committee

7.5.11 The Vice-President: Internal shall have such other duties as may pertain to the Office.

7.6 Bonding

7.6.1 The President, the Vice-President: External, the Vice-President: Finance, the Vice-President: Activities and the Vice-President: Internal shall be bonded.

7.8 Officer Accountability

7.8.1 At the Full Council meeting in September each Officer shall present a report of their objectives and duties and the progress of the committees for which they are responsible.

7.8.2 At the beginning of the first half of the Joint Council Meeting in March the Officers shall be held accountable for the past year; each officer shall present a detailed report to the Society outlining the fulfillment of the Officer's objectives and duties and the Committees under the Officer.

APPLICABLE AMENDMENTS

[Italicised & Underscored implies words that have been added]

[Strikethough implies words that have been eliminated]

From Section 4.2.3: Term of Office

The term of office for [~~,~~] the President, the Vice-President External, the Vice-President Finance, the Vice-President Activities, and the Vice-President Internal shall be the period from the beginning of the second half of the Joint Council Meeting immediately following the elections in March to the end of the first half of the next Joint Council Meeting in the next following year.

7.0.2 The Officers shall have the power to call a Meeting of the Members pursuant to clause 8.1.2.

7.1 President

7.1.7 The President shall be specifically responsible for the Academic Affairs - E.F.C.R. Committee, ~~the Computer Committee, the Climate in Engineering Committee~~, the Fourth Year Committee and the *Student Issues Committee* ~~Women's Issues Committee~~.

7.2 Vice-President: External

7.2.3 The Vice-President: External shall be responsible for all matters external to the Society as well as ~~selected internal activities as determined by the Officers~~ *any other duties that pertain to the office. This shall include liaising with all external organizations of which the Society is a member.*

~~7.2.4 The Vice-President: External shall be responsible for ESSCO and CCES.~~

~~7.2.5 Any members of the Society who attend a conference at the Society's expense must post a bond of $20.00 before leaving. Upon their return a written conference report must be submitted within two weeks where upon which the bond will be refunded.~~

7.2.6 The Vice-President: External shall be specifically responsible for the Employment Committee, the High School Liaison Committee, *and* the Professional Development Committee ~~*and the Communications Committee.*~~

7.3 Vice-President: Finance

7.3.3.1 The Vice-President: Finance shall be responsible for approving all financial transactions.

7.4 Vice-President: Activities

7.4.7 The Vice-President: Activities shall be specifically responsible for the Blue and Gold Committee, the First Year Committee, *the Second Year Committee, the Third Year Committee,* ~~the Orientation Committee and~~ the Social Committee, *the LGMB, and the Chief Attiliator.*

7.5 Vice-President: Internal

7.5.10 The Vice-President: Internal shall be specifically responsible for *the Communications Committee and* the Web Site Committee

7.5.12 The Vice-President: Internal shall be the Secretary of the Corporation.

Do you know a student who has made an outstanding contribution to the university community?

If so, you may nominate him or her for a

GORDON CRESSY STUDENT LEADERSHIP AWARD

Established by the University of Toronto Alumni Association, these awards will be presented to students at a special ceremony hosted by President J. Robert S. Prichard in April 1999.

The Cressy Award recognizes students with high academic standing who have made substantial extra-curricular contributions to their college, faculty or school, or to the university as a whole.

Nomination forms may be obtained from the Department of Alumni and Development, 21 King's College Circle, Main Reception. For more information, please call (416) 978-4258 or (416) 978-0838 or email louise.china@utoronto.ca

Deadline for nominations:
Monday February 8, 1999

UTAA: University of Toronto Alumni Association

Election Special Continued...

The following articles outline the Code of Ethics for the Executive Positions available on the Council as well as Codes of Conduct during the Election Campaign

Engineering Society
Code of Ethics

We, the students of the Faculty of Applied Science and Engineering, by virtue of the privilege of being here, represent Skule™ to the larger society.

We have, therefore, a special duty to exemplify the best qualities of the faculty and to observe the highest standards of personal and professional conduct. In so doing, we promote ourselves and the merits of the university, the faculty and the engineering society.

In our words and actions:

we embody respect for truth, integrity, fairness, free enquiry, and the opinions of others;
we respect all individuals without regard to race, colour, sex, creed, sexual orientation, ethnic or national identity, disability or age;
we uphold the reputations of other students and respect them;
we respect a student's right to privacy and confidential information;
we follow the letter and spirit of laws and regulations included in the Canadian Charter of Rights and Freedoms, and the Ontario Human Rights Code;
we observe these standards and actively encourage colleagues to join us in supporting the highest standards of conduct.

continued on page 9 - See CODE

News External

Articles that appear in News External Have been written by people outside the Engineering Society body and have been generously submitted for publication in the Cannon

Geometric Progression, Slowdown; Email Hoaxes

Leslie Goff
IDG

Do not read this story! Contained within this text are subliminal messages that will deteriorate the CTH cells in your brain! Simply put, the CTH cells manufacture the neurons that are responsible for linking impulses to rational thought. Without them, you would be reduced, over a period of only 24 hours, to a blithering idiot! All your normal functions eventually would shut down! Warn all your friends! Immediately distribute a copy of this to everyone you know!

Unbelievable, of course. As far as we know, CTH cells don't exist. Subliminal messages may or may not influence the unsuspecting -but not within the pages of Computerworld (again, as far as we know).

But Internet users routinely fall for similar admonitions: the urban legend of choice for the Digital Age, the virus hoax.

Virus hoaxes first surfaced on the Internet in 1988, according to the U.S. Department of Energy's Computer Incident Advisory Capability (CIAC) and have been inciting panic ever since - often in people who should know better.

Take, for example, the vice president of intellectual property at a major footwear manufacturer in the Northeast. Last December, he forwarded a virus hoax called Join the Crew to other top managers at his company.

"*WARNING*," reads *Join the Crew*. "*If* you receive an E-mail titled 'Join the Crew,' DO NOT open it! It will erase EVERYTHING on your hard drive! Send this letter out to as many people as you can. This is a new virus that is not yet detectable."

By the time the information systems liaison in the footwear maker's legal department received the message, it had spread throughout the company — maybe faster than any real virus would have. "I thought, 'Oh no, how embarrassing,' " says the IS liaison, who requested anonymity. "There was no way [for the vice president] to gracefully bow out."

Join the Crew is a popular hoax; the IS liaison was already hip to it. The tip-off: Merely reading an E-mail message can't damage a PC hard drive. Downloading an attached executable file can unleash a virus, but eyeballing a message is harmless. Some IS folks don't catch the hint, however.

Rob Rosenberger, a security analyst at a Fortune 1,000 company in St. Louis and webmaster at the Computer Virus Myths Homepage, says his compadres in the IS department were responsible for spreading two commonly transmitted virus hoaxes: Win a Holiday and Unable to Deliver, which use the same format as Join the Crew. In each case, about 200 employees - 10% of the company's users - flooded the firm's two-person security team with alarmed inquiries.

"It wasn't [end users] who passed the message, [it was] people working with Unix and NT boxes who know a little about viruses," Rosenberger says. "There are so many new people on the 'net who read about evil geniuses who spread viruses in a temper tantrum, and they believe it. So when they see an alert, they think they have to forward it."

GEOMETRIC PROGRESSION: A user sees a virus hoax and *tells* four friends about it. And they tell four friends, and they tell four friends, and before long - to borrow a line from the Bee Gees - someone's started a joke that's started the whole world crying.

About half the weekly calls to the help desk at the International Computer Security Association (ICSA, formerly NCSA) in Carlisle, Pa., are inquiries about hoax warnings, says Jonathan Wheat, a senior ICSA lab analyst who helms the help desk and maintains the company's virus hoax page. The callers are a mix of end users and IS professionals.

Wheat says the worst calls come from computer hypochondriacs: people who read a hoax warning and become adamantly convinced they have a virus. "They read the message, and later their system is crashing," Wheat says. "It's really psychosomatic: They hear about the illness, then they get the symptom."

Like all the best lies, virus hoaxes that work tend to contain a grain of truth - just enough to sound plausible. They're also peppered with technical jargon. Consider the recent Bill Gates hoax, which spread so far it finally elicited a response from the man himself and in March was posted to Microsoft Corp.'s World Wide Web site.

The Gates hoax began last November as a bogus chain letter (a whole other annoying E-mail burden) that offered recipients $1,000 and a free copy of Windows 98 for forwarding the message "if it reaches 1,000 people." Within the E-mail, it said, was an "E-mail tracing program that tracks everyone to whom this message is forwarded to. It does this through an [sic] unique IP address logbook database. We are experimenting with this and need your help."

The chain letter evolved into a virus hoax a few weeks later when an enlightened recipient sent out a *follow-up* message requesting users' credit-card numbers, supposedly in order to rush them their $1,000. The $1,000 wasn't compensation for forwarding the original chain letter, the E-mail said, but for pain and suffering because the original message held an embedded virus program.

Other recent hoaxes include Budweiser Frogs Screen Saver, the AOL Cookie Virus, PenPal Greetings, Good Times, Irina and the Death Ray Virus.

SLOWDOWN: Wheat says hoaxes seem to be subsiding somewhat. The ICSA didn't get its customary rash of calls on this year's two consecutive Friday the 13ths (in February and March) or on April Fool's Day. Those are the days usually favored by hoaxers. Generally, Wheat says, virus hoaxes peak in January following the holiday surge in home PC purchases, when vast numbers of users make their first forays onto the Web.

As the hoaxes make their way from the mailboxes of home users to their friends and loved ones behind corporate firewalls, the incidents get out of control because "IS security is often the last to know," Wheat says. Why? "Users are nervous because they think they have a virus, and they don't want to be in trouble," he says.

Embarrassment may be the biggest consequence for users who spread the panic. But for IS, virus hoaxes mean a lot more than egg on the face: Fielding a call for help, sifting through E-mail, researching and calming users can easily add up to a day's work for each incident. "The larger the company, the more important this becomes," Rosenberger says. "Time is money. Resources are money. A hoax costs money."

On the upside, virus hoaxes have helped raise security awareness among end users, says Tony Samms, vice president of distributed computing security at SunTrust, a financial services firm in Atlanta. Over the past eight months, four or five hoaxes have circulated at SunTrust, including Good Times and the AOL Cookie Virus. Each generated 20 to 30 queries from users.

"We do use those incidents to create security awareness; users learn to invoke their virus software to check their system. It makes them aware that they're vulnerable, so it's actually good for us," Samms says.

Musically Speaking: Valentines

Frank Nakashima
Toronto Early Music Centre

The Toronto Early Music Centre presents a special Valentine's Day edition of "Musically Speaking", an educational music program at the Royal Ontario Museum, on Sunday, February 14th at 2:30 p.m. Free with admission to the Museum.

The featured guests on this occasion are John Mayberry and Ian Bell who, for over a decade, have presented traditional songs and curious historical entertainments at museums, historic sites, folk clubs, festivals, and almost any place where they won't get kicked out.

They sing both in unaccompanied harmony and along with melodeon, guitar, bones, and mandolin. Their repertoire includes early Canadian and British songs, Music Hall turns, lively instrumental selections, and several unlikely dance numbers.

With the celebrated "Bullero Bros. Phrenoloterpsichorean Travelling World Exposition", they have thrilled (and I mean thrilled!) with such specialities as "Villikens and His Dinah - Exposed!", "Double Leaps Over Various Objects", "The Egg Hornpipe", and "The Mystic Oracle Of Kilkenny" (a St. Patrick's Day favourite). To hear John and Ian perform, is to gain a new appreciation for the phrase, "to boldly go where no one has gone before."

They also happen to know some delightful songs of 'amour' (that's right - Love!). Some of these songs may contain mature themes. Parental guidance is advised, even though kids are sure to enjoy their performance!

For more information, please contact:
Toronto Early Music Centre
427 Bloor Street West
Box 17
Toronto, Ontario M5S 1X7
Telephone (416) 966-1409
Email: temc@interlog.com
website:http://www.interlog.com/~temc

Scientists Give Man A 'New' Hand

The Exploration Network

Matthew Scott wiggled a finger on his left hand on January 26, 1999. The feat isn't one that would usually make headlines, but Scott is the world's second person to get a successful - at least so far - hand transplant from a cadaver.

The 37-year-old New Jersey resident underwent a 14 ½-hour operation on Sunday to receive a new left hand. He lost his in 1985 to a firecracker accident and has been using a prosthesis until his marathon operation.

Although the new hand would never work like a normal one - Scott will probably never be able to button bis shirt or pick up a penny with the new hand - doctors at the Louisville Medical Center say he will be able to pick up a tennis ball or open a door.

Sucb benefits however, come with a price. Scott will have to take powerful anti-rejection drugs for the rest of his life, which have potentially widespread side effects that include high blood pressure, increased risk of infection, diabetes, damage to the liver and kidneys, increased risk of cancer, and hand tremors. With such substantial risks, many have criticized the operation, questioning wbether the benefits outweigh the risks.

Warren Breidenbach, who led the Louisville surgical team, says the hand transplant is an "investigational" procedure with a 30 to 50 per cent chance of rejection over the next year.

Last September, a team of international scientists transplanted a donor hand to a 48-year-old Australian in a 13-hour surgery. Clint Hallam has gained some movement in the hand. At least one attempt at a hand transplant occurred in South America in 1964, but the patient's body rejected the hand within two weeks.

LIFE to Expand at U of T

Susanne Frame
Engineering Dimensions

University of Toronto researchers will spend the next ten years seeking ways to create a human heart that will someday save lives. Known as Living Implants From Engineering (LIFE), the project brought 13 distinguished scientists, engineers and clinicians from North America and Europe to Toronto in early June.

While examining biomedical solutions to the worldwide shortage of vital human organs, the group developed a plan to use tissue-engineering strategies to create living organs. "We're shooting big," said Professor Michael Sefton, P.Eng., of the University of Toronto's Institute of Biomedical Engineering, and Chemical Engineering. "Our vision is that we'll be able to pop out a damaged heart and replace it as easily as you would replace a carburetor in a car."

The feat of tissue engineering involves a cross-section of biotechnological and bioengineering techniques. Scientists combine these techniques to create new materials and devices. Currently, there are two main approaches to tissue engineering. One is to create bone and skin substitutes by growing cells in a culture and planting them on a material in the body; the other is to implant a material in the body that encourages a specific response, such as tissue regeneration. But current practice has proved to be less effective in the recreation of cardiac muscle.

"In order to 'grow' a heart, we first need to 'grow' a heart valve," says Sefton. LIFE will focus initally on reducing the high risks of heart-valve surgery by creating transplantable valves, which "should lessen the chance of blood clots and lower the need for anticoagulant medication," Sefton explains.

LIFE will eventually expand its scope to include other transplantable organs. A funding plan for the ten-year project has not been structured, but sefton is optimistic. "We're hoping the scope and possibilities of this project will catch the public's imagination," he says.

Upcoming SAC Events

Hangar

The University of Toronto Student's Administrative Council is pleased to present **IndieBlast '99**, with special guests **The Nines, Medium** and **Ember Swift**, on Friday February 5, 1999, live in concert at the Hangar, south end of Sidney Smith Hall at 100 St George Street.

Admission is $2.00. Tickets available at the door. Come early, doors open at 9:00pm.

For more information please call (416) 978-4911 ext 235

The University of Toronto Student's Administrative Council is pleased to present **superGARAGE** on Saturday February 6. 1999, live in concert at the Hangar, south end of Sidney Smith Hall at 100 St George Street.

Admission is FREE, come early, doors open at 9:00pm.

For more information please call (416) 978-4911 ext 235

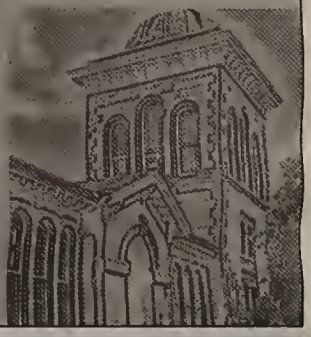
Seminar: Debt Crisis & Youth Unemployment

Thursday, February 4th, 1999, 1:00 - 2:00 - Hart House Chess Room

SAC Perspective Series: David Caplan, Ontario MPP and Liberal Youth Critic, speaks on the student Debt Crisis and Youth Unemployment.

Brought to you by SAC's External Commission, the Perspective Series brings provincial and federal politicians on to campus to speak to, and take questions from students regarding Post-Secondary Education.

Form information call the Student's Administrative Council: (416) 978-4911



NOTICE OF ELECTIONS AND REFERENDUM

Referendum for Engineering Career Office and Engineering Society Elections for the 1999 - 2000 term of office for the following Engineering Society positions will take place on:

Thursday March 18th, 1999 and Friday March 19th, 1999:

President
Vice-President: External
Vice-President: Finance
Vice-President: Activities
Vice-President: Internal

Nominations shall open at 9am on Monday February 22nd, 1999 and close at noon on Friday March 12th, 1999.

Nomination forms may be obtained from Julie in the Engineering Society Office, SF B670 on or after February 22nd.

More election details in the next issue of The Cannon.

Star Wars, South Park, Austin Powers: Coming Soon...

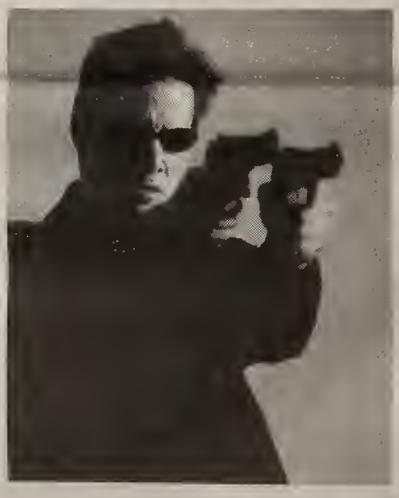
Movie Pre-Reviews for 1999 (Jan - June)

Dave Choe
CompSci 9T9

I began this article as a review of the movies of 1998. Besides, if you want a review of last year's movies, there are tons of them out there. Or you could watch the Academy Awards and try to forget some of the drek released this year. Instead of reviewing 1998, I decided to look ahead and preview the upcoming movies of 1999. I didn't include all of them, just the ones I am anticipating or are worth mentioning. Your anticipation may vary. Note: There's a lack of dramas on this list, because of their short production time. Plus, being a action-movie kind of guy, dramas are low on my list. Sorry.

First up is Payback, where you get to root for the bad guy, in this case Mel Gibson. He's the most honorable of the thieves in this movie, and that's not saying much. Out for revenge against his former friend who left him for dead, he crosses a Chinese gang, the Mob, and his junkie wife along the way. Oh, and it's equal parts comedy and action, in case you couldn't tell. A remake of the 1967 Lee Marvin movie Point Blank.

Another film worth mentioning is the thriller 8MM, opening in late February. Private Dick Tom Welles (Nicolas Cage) is hired by a widow to find out if the (very sick) pictures on a 8mm reel of film are genuine. It takes Welles to the horrific and depraved world of underground pornography, where you can get anyhthing for the right price. Warning: the screenwriter is David Fincher, the same guy who did Seven. (That's good.) Warning: the director is Joel Schumacher, the same guy who did Batman and Robin.(That's bad.)



Finally, to round out the February movies is The Corrupter. Set in New York's Chinatown, Chow Yun-Fat plays a detective in league with the Triad gangs to keep the peace. A gang war erupts, and so the Asian gang force gets a rookie, played by Mark Wahlberg. Sounds like standard old cop/young cop fare, let's hope Chow Yun-Fat and Wahlberg can pull it off.

From Kevin Williamson (writer of Scream/Scream 2) comes Killing Mrs. Tingle, a dark comedy in the Heathers vein. Potential high school valedicorian Leigh Ann (Katie Holmes) gets a failing grade from the bitchy Mrs. Tingle, and somehow ends up holding her hostage in order to insure she becomes valedictorian. Not so much a horror film, as the body count is sacrificed for psychological warfare between teacher and student.

The dark side of teenagers is explored again in Cruel Intentions. Sebastian(Ryan Phillipe) and Kathryn(Sarah Michelle Gellar), two wealthy and cruel step-siblings, attend a Manhattan prep school. They make a bet; if Sebastian can't seduce the daughter of the Head Master (Reese Witherspoon), Kathryn gets his snazzy car. If he can, he can get something *he* wants very badly; he can have sex with Kathryn. Whoa. A 90's remake of Dangerous Liasons, without the costumes and wigs and stuff.

Ron Howard's next movie is March's Ed TV. Video store clerk Ed, the title character(Matthew McConaughey) agrees to be filmed 24/7 for a month by a reality TV show. He becomes a celebrity, along with his family and friends, when the ratings soar. Other actors include Ellen DeGeneres, Jenna Elfman, Woody Harrelson, Dennis Hopper, Elizabeth Hurley and Martin Landau.

Back to action movies with The Matrix, coming out in April. This is Keanu Reeves' latest cyberpunk attempt, the last one being (shudder) Johnny Mnemonic. A normal guy begins to question his own reality when he begins to suspect that he is not leading a normal life, but he is wired in with millions of people in a giant computer system, a virtual world. Promises lots of action, a bald Laurence Fishbume and more action, less talking from Reeves.

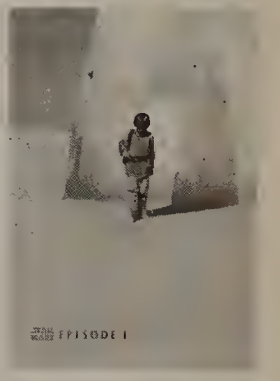
Futuristic weirdness continues with David Cronenberg's eXistenZ. A future where game designers are worshipped, metal detectors are everywhere, and a game has been created that melds the players real and imagined worlds. Stars Jennifer Jason Leigh, Jude Law, Willem Dafoe, and Canucks Callum Keith Rennie, Sarah Polley and Don McKellar. Promises to be weird, gross, slightly disturing and uniquely Canadian.

Also in April, the antieipatcd South Park movie - subtitled Bigger, Longer and Uncut (get it?). The only thing known so far about this movie is that involves military school, and that Kenny will die. Count on an R-Rating, and lots of kids sneaking into this one.

And now we come to May, and a little movie called Star Wars: The Phantom Menace. People have been waiting for this one for decades. I'm sure a description is unneccesary, if you're a fan, you already know what it's about. I will say that I'm giddy with anticipation. Obviously studios don't want their movies to open anywhere near this release date, as I have very little information about other May movies.

So let's skip to June and Austin Powers: The Spy Who Shagged Me. This sequel to the last year's spy spoof marks the return of Austin Powers, Dr. Evil(both Mike Myers) and No. 2 (Robert Wagner), and features new "Powers girls" Felicity Shagwell(Heather Graham) and Ivana Humpalot(Kristen Johnson). Dr. Evil goes back in time and demands a 90's sized ransom, and Powers goes after him to stop his plan to blow up countries from his secret hideout.

Next time: part two of the movies of 1999, from July to December.



Engineers in Campus Politics

Milton Chan
2A Computer Engineering
University of Waterloo

Student politics in UW is honestly not the most exciting show on TV. Unlike most universities, we are not a member of CFS, Canadian Federation of Students, and therefore we do not see students chaining themselves to the doors of Needles Hall everyday. This is probably the reason why so few people actually read the Imprint, because they fail to dig up controversy on a regular basis. I missed my big chance to talk about student politics when the club policy came out. That kind of issue would cause riot in real politics. However, with the well-known UW apathy, the FEDS office got out of trouble without any storm, because there are not enough people to stir the storm up.

Engineers are generally stereotyped as the least attentive group to student politics.

There are traditionally empty seats on the Students' Council for Engineering. (That was how I became the first ever 1A student to sit on the Students' Council) It usually takes us about four to six months until those seats are filled; when the term is only twelve months long this is a pretty good chunk. This situation is rather ironic since the Engineering Society is the most active and most structured society out of the six societies in Waterloo. There are also a few cold hard facts that run against the typical assumption. (Keep in mind, there are about 3000 engineers, out of 12000 full time undergraduates):

1) In the past ten years, every other FEDS president have been Engineers (Adam Chamberlain 88-89, John Vellinga 90-91, Dave Martin 92-93, Steve Codrington 94-95, Mario Bellabarba 96-98)

2) Last Year, all three undergraduate members of the Board of Govemors were Engineers.

3) In the club scene, almost half of the club presidents are engineers (the other half being mathies).

4) Engineers occupied two out of six seats on the Board of Directors.

5) Engineers contribute most to their endowment fund. ($75, compares to $27.44 in AHS, $30 in ES, $31.42 in Math and $50 in Science) WEEF spent more money than the Federation endowment fund last year.

6) Five out of six engineering members on the Students' Council had over a 90% attendance rate last year, while the council average was 59%.

7) The Engineering Society has two regular publications (Iron Warrior and Enginewsletter), while math and science have one. ES, AHS and Arts have none.

8) EngSoc has the most charity events (Bus Push, Canada Day, Circus Eng)

9) Engineering is the only faculty that has Scunt outside of frosh week!

Chew on these facts for a bit, then read on.

Since I told you all those glorious facts about engineering students in campus politics, you might ask (come on, at least act like you are interested) that why are we stereotyped as the least attentive group. Unlike last time, I do not have some statistical fact to present. However, I can give you a few reasons, other than "I've got a C++ program to finish tonight"...

Engineering students are generally not involved in campus wide politics. It is true that when an Eng Soc person runs for the Federation (e.g. Stephen Codrington was

continued on page 9 - See SELF

Teresa's Tantrum

Teresa Huang
Mineral 9T9

My mind has been rather preoccupied with a certain issue for the past few months. My thoughts have been fickle and I have contemplated many possibilities. As most people around me may have found out, willingly or otherwise, the impending issue being what do I want to be when I grow up?

Call it a pre-life crisis if you will, but I am scheduled to be grown up come this May, and I must figure out what I wish to do. I used to have this fantasy about living the Indiana Jones kind of life. To be stranded in some obscure land fraught with adventure one moment, and to be wearing a suit in some serene building next. Let me hold that thought for a minute.

I've flirted with the idea of becoming a fire fighter that which generated decibels of laughter penetrating enough to demolish a small building. And I've semi-seriously considered being an explosive engineer. Then I got e-mails from complete strangers telling me about their powder-man days in the Yukon.

My latest career fantasy of the day is to become a lawyer specialising in environmental law. Yet I don't know if this new found fascination with law is so that I can sue my young and able-bodied neighbours and maybe make them pick up a snow shovel for once in their pathetically comfortable lives and, here's the tricky part, make them learn how to use it! Or maybe I am equating law with Ally McBeal legs.

Whenever I am in one of those industry mingle occasion things, I seem to always get introduced as the one who is "into computers and stuff". While I appreciate people watching out for me but what does it mean to be "into computers and stuff"? Surely I am no coder material. Just because I have an amazing e-mail processing capacity and am able to sit in front of the computer for several Wilson cycles, it doesn't mean that I can or want to do comp stuff. The only thing I know about OOP at this point is that it is POO backwards.

Which brings the topic back to my neighbours...

So now I must find some way to render myself marketable. To perhaps create a new me without really changing the old me and make me seem oh so much better than the real me.

Maybe I should change my hair colour to something with a name like blueberry. Hey, it worked for the iMac. According to some article I read, the iMac was the best selling desktop in North America in its last quarter. What was Apple thinking? "Hmmm... The desktop market is getting really competitive. Hmmm... Newer and faster and better technology is oozing out like some post-Olestra phenomenon (my neighbours seem to be the reoccurring theme here). So let's change the colour of our product!"

Back to career choices. I think I would be great at generating random thoughts and e-mailing them to everyone. I really should go work on my thesis. Which rhymes with some word that really reminds me of my neighbours.

Self Imposed Apathy

continued from page 8

President, Mario Bellabarba was Speaker), Engineers came out and vote in mass. However, in other times, Engineering often has the lowest voters turnout. In the 98 Federation/Senate election, only 5% of engineering students voted. (Compared to Arts 8%, Math 9%, Science 14%, ES 14%, AHS 18%) There is a lack in enthusiasm about representation. It took us five months this year to fill all engineering seats on the Students' Council, which is probably the most interesting political body we can sit in as students. Other representational bodies are even worse. Our Senate seat (Senate is the highest education authority on campus) has been acclaimed at least three times in a roll (93, 95, 97). Our only seat on Senate Undergraduate Council, the highest authority on undergraduate affairs, was vacant for at least two years.

Furthermore, it is rather rare to have an engineering student sitting on any administrative committee. Those committees may sound boring, but they are the battle ground for what we complain most often about.

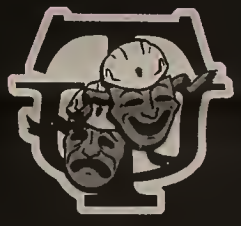
Let me list a few: Joint Health and Safety Committee (talking about roller blades), Orientation Advisory Committee (FOC doesn't set the rules, OAC does), Provost's Advisory Committee on Fees (any fee other than tuition and co-op), Policy, Procedure, and Bylaw Committee (set the "pub suspension" rules). Student issues are not high on our priority list either. As long as the bomber is open as usual, (which it was not over the summer!) we prefer to spend more time procrastinating with our high pay co-op jobs.

We really do not care about what is the percentage of homosexuals on campus or how empty is the Volunteer Centre. Some of us may occasionally complain about "Food Service Sucks" or how co-op ripped us off, but no one really pays any effort to look into and act on the issues. Even tuition was never been an issue until recently, and even then only a few engineering students really pay close attention. Perhaps we spend too much time meditating our glamorous future as some executive VP of some giant corporate.

I didn't write this to entertain myself. I am sure there are engineers out there (hey you, I am talking to you) who do give a damn about student rights and issues, and are willing to participate. Just like real politics, most people talk about them, but never participate. If you actually bother to read my article, you are the right audience. Nothing is going to change if YOU do not stand up and speak for it. However, as I "rudely" told my fellow classmates, I have more respect for your opinion if you constantly participate in the process.

Please stop the "tradition" of self-imposed apathy.

Are you gonna?



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PEY & CAREERS

Engineering Career Office Activity Report

Seema Opal
Engineering Career Office

It is just the end of first term and much in the career development of U of T engineering students has already taken place. This has been an extremely busy recruiting season for graduating engineering students with an extraordinary number of firms on-campus with the purpose of recruiting engineering candidates. We are also looking forward to a very busy summer recruiting season next term. Below are some of this year's career highlights:

In addition to the hugely successful Career Days held at University College between September 23-25th, over 50 companies have been on campus to meet with graduating students on a one-to-one basis. Company representatives have told us that engineering students have been well-prepared and articulate. Congratulations!

Over 70% of graduating engineering students had completed the Graduating Students Employment Services (GSES) Orientation offered by the Career Centre. Completion of the GSES Orientation enables 4th year students to apply to many excellent employment listings offered in the Career Centre and on the Career Centre website. If you have not already done so, please go to the Career Centre to register for the Orientation session.

Engineering students from all years have attended the numerous and excellent career development seminars and workshops offered by tbe Career Centre. Don't forget that Career Development Certificates are available upon the completion of workshops. Demonstration of active professional development activities is a valuable marketing tool in your job search. Attendance at these sessions will be an asset for your resume. Please visit the Career Centre for a full listing of seminars and workshops.

The Engineering Office website and online resume database is fully up and running. Please visit us at http://career.skule.ca/ to view numerous resources, link to numerous professional engineering associations, and submit your resume to our exclusive Engineering Online Resume database. Over 600 current students and alumni have already registered on to this database. Activate your resume ASAP so that potential employers can see your qualifications and get in touch with you. Registration forms are available in the Engineering Career Office.

New to the Engineering Career Resource library is an electronic database of 9000 firms located in the Silicon Valley. Drop by the Engineering Career Office to have a look at this CD-ROM as well as the other excellent engineering specific career resources.

The Engineering Alumni Mentorship Program is in its 2nd year. More than 30 dedicated alumni have volunteered their time and experiences to mentor current students. Over 60 current students have taken advantage of this program. If you are interested in discussing academic and career-related issues with a graduate of the program please fill out a mentorship application form available in the Engineering Career Office or on our website: http://career.skule.ca .

And, we are in tbe final stages of producing a 4-page full-color Recruiting Brochure that will be sent out to 1000s of non-active recruiting companies across North America. In this recruiting brochure we emphasize the benefits of hiring U of T engineering students over tbe summer. Our goal is to increase the number of summer postings advertised at the Career Centre. But, PLEASE don't simply rely on the summer employment postings advertised at the Career Centre or on the Career Centre website to find a job.

You must be able to identify your skills and effectively market these skill in a resume and covering letter, learn and practice techniques such as networking and cold calls, and develop strategies to enhance your effectiveness in interviews. Again, the Career Centre offers excellent workshops and seminars to help you develop these skills and strategies. You can also find many good books on these topics in the Career Centre Resource library.

Mentortech: Building Companies From Ideas

Professional Development Centre
Faculty of Applied Science and Engineering

You've got technical skills-you think you know a good idea when you see one-and every time you hear of a technical start-up that makes it, a part of you longs to give it a try.

Here's an opportunity to fill in the missing pieces of the equation-to learn about the business elements that are essential to success.

Science and engineering students considering career options should attend this series. The aim of the course is to equip participants with the skills and methodology to build proactive business plans that will lead to the financing and ultimately the commercialization of innovative technology.

This series of 10 interactive lectures will give you the opportunity to learn from those who have "been there done that", and offers the tools to plan your new venture.

MENTORTECH:
Building Companies from Ideas

Dates: January 20-March 24, 1999
Wednesday evenings
Time: 6:00pm to 8:00pm

Register online at: www.pdc.utoronto.ca, or visit us in the Galbraith Building, Room 153. You can also call us at 416-978-3119 to speak to our registration officer. We will fax/mail you a registration form.

31st Annual Congress of Canadian Engineering Students (CCES)

Industry Fair, Toronto, Canada - As you may or may not know, a group of University of Toronto engineering students is organizing the 31st annual Congress of Canadian Engineering Students (CCES). This is a week-long conference held by a different school each January - and it's going to be held in Toronto this January!

Representatives from engineering schools from across Canada are going to be in attendance, along with a few from the U.S. and Europe.

One of the events of CCES is an Industry Fair. This is an opportunity for sponsoring companies and other organizations involved with CCES to showcase themselves to congress delegates and other invited guests. Well, thanks to the high level of support that we've received from witbin the U of T community (particularly the Dean's Office, the UTAA, the Office of the Provost, and the departmental offices within engineering) we are able to invite you to this event.

Event:	**Industry Fair - 31st Annual CCES Congress**
Dste:	**Thursday, January 7th, 1999**
Time:	**11am - 2pm**
Location:	**Toronto Colony Hotel**
	(89 Chestnut Street, Bsy & Dundas)
Admission:	**FREE**
Companies:	**Netron**
	Nortel
	Price Waterhouse
	Coopers Mold-Masters
	Enbridge Consumers Gas
	Andersen Consulting
	& MANY MORE

Plus, representatives of various professional organizations in attendance.
You don't have to register and there is no charge to attend.
We'll be releasing more information in the near future.

Hope to see you there!

Tony Ruberto
President
31st Congress of Canadian Engineering Students

[Editor's Note: Hmm... Notice the date? We didn't.]

FOR ALL YOU CIVIL ENGINEERING STUDENTS...

Maura Lecce & Fanche Belevski
CSCE Co-Chairs

The University of Toronto Student Chapter of the Canadian Society for Civil Engineering (CSCE) is holding the 2nd Annual Career Information Session. This event is catered specifically for Civil Engineering Students and is directed to educating the students about the exciting career opportunities they face upon graduation. This event is not meant as a recruiting session, but it is an excellent chance for Civs to discover what the various consulting and contracting firms are all about and most importantly, to make contacts with the representatives from Industry. Currently, 10 firms have confirmed their attendance and we are expecting more!

CSCE
2nd Annual Career Information Session

Date:	**Wednesday, Jan 20, 1999**
Time:	**1pm to 3pm**
Location:	**Galbraith 115 Civil Engineering Graduate and Staff Lounge**
Admission:	**an admission charge of $2.00 applies for non-CSCE members**

For more information, please contact your CSCE class representative.

The Art of Compensation Negotiation

Wet Feet Press · The Information Source for Job Seekers - http://www.wetfeet.com · (800) 926-4JOB

WE WANT YOU! Ah, the three magical words that can make even the most sadistic job search suddenly seem worth the pain. With your offer in hand, now the real fun begins. It's time to head back to the dance floor one final time for what most people think is the most interesting, and challenging, part of the job search-the job offer negotiation.

As good as your offer probably is, with a polished negotiating strategy most deals can be sweetened. The WFP research team has been researching compensation negotiation strategies at top MBA programs for the last four years. Here are a few of the tips our insiders offer to help you negotiate the best possible compensation package!

WFP Compensation Negotiation Tip #1:

Get out of that salary box! Think broader! No doubt, salary is one of the most important elements of your total compensation package-perhaps the most important—but it is just one of the many negotiable elements of the offer with which you've been presented. In fact, if your salary offer is fair (you'll know that by gathering comparative data), it may be the least negotiable element of all. So broaden your vision!

There are many other aspects of a compensation package that may be just as critical to you and your career in both the short and long run. For example, a well-negotiated package of reimbursements for moving or educational expenses could be worth additional thousands of dollars.

A progressive agreement regarding flextime could give you the time you need to stay sane and dedicate energy to other important priorities in your life. Hoping to receive a trip to Europe as a graduation gift? Negotiating your start date can mean the difference between visiting only the Eiffel Tower in Paris and taking in the sounds of Amsterdam, the smells of Rome and the nightlife of Barcelona.

Although some parts of the compensation package may be fixed (for example, the number of vacation days allowed per year), there are likely many otber aspects that can and should-be negotiated. Not only can you come up with a better deal for yourself, you may even be able to come up with something that works better for the employer.

WFP Compensation Negotiation Tip #2:

Know the market value of your skill set and experience. It's essential that you know how much an industry pays for your particular position if you want to justify a higher salary.

Where do you get this information? Well, your career center is a great place to start; it should have a wealth of data based on the packages negotiated by recent graduates of your program. That's some of the best data you can get your hands on, because the packages negotiated by job seekers at different schools in different cities and countries can vary widely.

For more general guidelines and data on salary standards, the Web offers a wealth of information. WFP recommends you start with JobSmart, a site organized by the Bay Area public libraries, at http://www.jobsmart.org/tools/salary/sal-surv.htm.

WETFEET.COM
THE INFORMATION SOURCE FOR JOB SEEKERS

WFP Compensation Negotiation Tip #3:

Don't be the first to name a salary range. Instead, if the employer asks you how much you were hoping to make, graciously sidestep the question and let the employer be the first to name a range. A perfectly good answer to the question "how much are you looking for" is "that's a great question, and before I answer I'd like to know what the range is for candidates in similar positions with a similar skill set?" That gives you data to begin a negotiation, whereas if you're the first to put a number on the table, it may lock you into a range that undervalues the contribution you can make to the company.

WFP Compensation Negotiation Tip #4:

You've heard that you should get the offer in writing, but also be sure to get the terms of your negotiated deal in writing. If your future employer doesn't seal the deal with a written contract, write a letter to the company confirming the terms of your employment and save a copy.

Negotiating a compensation package can involve a huge range of issues, from salaries to 401 plans to options, and it's always better to cover your assets than to have your negotiated pay raise suddenly go on matemity leave.

WFP Compensation Negotiation Tip #5:

This tip is especially tailored to those of you who are considering a position with a start-up. Chances are the compensation package offered to you by an entrepreneurial company (that's code for high risk, maybe high reward, maybe no reward) will be more complex than your offer to go to work for one of the Fortune 500, and it will almost certainly include some type of at-risk pay.

If you're really an entrepreneur, at-risk is good. That means all those late nights and weekends may end up earning you more than dinner on the company.

That said, in evaluating an offer that includes some form of profit sharing, it's critical to know how your compensation is affected by the profitability of the company. An excellent question to ask your recruiter is what happens to your compensation package in the event the firm isn't profitable. If your bonus is based on hitting specified targets for personal performance, the profitability of the company is a somewhat separate issue. If your entire bonus is tied to the company hitting its revenue projections, your risk profile is heightened. In most cases, you'll be better off considering your take from company-wide profit sharing as icing on your package rather than as an entitlement.

There you have it. Five tips from the WFP insider network to help you negotiate the best possible compensation package for you. We know they work-many of our staff have used these recommendations on the WFP management team and come away winners! (That's one of the occupational hazards of our line of work!) To learn much more about how to maximize your investment with your future employer, be sure to check out WFP's highly-regarded Insider guide, "Show Me The Money: The WFP Compensation and Negotiation Guide." Check out our free online preview at http://www.wetfeet.com/webc/wetfeet/s103.html.

Good luck with your job search from your friends at Wet Feet Press.

Visit www.wetfeet.com 24 hours a day to research a variety of industries.

Check out free company profiles and preview our Insider Guide series.

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Finding Summer Work Tips:

Seema Opal
Engineering Career Office

Know what you have to offer...

Assess what your expectations are:

1) What types of employment are you looking for?
2) In which work environment/industries would you like to work? How does a summer job fit in with your overall objectives?
3) What are your financial needs?

Assess your skills and Accomplishments:

1) Attend a "Discovering your Skills and Options" workshop
2) Research information on self-assessment in the Career Resource Library
3) Make a list of your skills

Assess the Workplace:

1) Consider the fit between you and possible work opportunities based on your skills, interests, values, and personality
2) Network and conduct informational interviews (see Network Binder in the Career Resource Library)
3) Research information on career descriptions and job search techniques in the Career Resource library

Know the needs of Employers...

Identify employers yuu plan to Target:

1) Check job boards and summer job search binders at the Career Centre and Canada Employment Centre for Students for potential employers
2) Pick up Career Centre tip sheets from the Career Resource Library on "Research Work Opportunities" and "How to Research a Company"
3) Attend workshops on "How to Identify Work Opportunities" and "Marketing Yourself for Today's Workplace"
4) Review Employer Directories available in the Career Resource Library
5) Read newspapers (local, community) and professional journals. Look for articles on work and the marketplace

Promote your skills to meet the Needs of Employers...

Prepare Your Resume:

1) Your resume must reflect your skills and experiences as well as address the needs of the potential employer
2) Review resume and cover letter resources available in Career Resource Library
3) Attend a "Resume and Cover Letter" seminar
4) Have your resume critiqued in the Resume Clinic

Prepare for the Interview:

1) Attend an "Interview Techniques" workshop
2) Review interview resources available in the Career Resource library
3) Arrange a mock interview with a Career Counselor who will provide feedback on your interview skulls

For more information please visit the Summer/Part-time/Temporary Employment Services Desk in the Career Centre in the Koffler Building at 214 College Street.

continued on page 12 - See SUMMER

High-Tech Culture Matters: Surf's Up!

Wet Feet Press

California would have the world's eighth-largest economy if it separated from the Union, so it shouldn't surprise anybody that its people and companies are leaders in innovation, not just in technology but in corporate culture as well. Specifically, we're talking about Silicon Valley and its high-tech culture, which is worlds apart from that of the staid East Coast bastions of money in terms of flexibility, work environment, and employee compensation.

And so with its economy rebounding tremendously since the early '90s recession (when the media was obsessed with Californians fleeing to Oregon, Washington, and Idaho, the boom years apparently gone for good), jobs are again abundant, fueled largely by the high-tech sector. If you've got a few technical skills (you don't need a lot) or business skills, a little job-hunting savvy (Wet Feet Press can help you out with this; keep an eye on http://www.wetfeet.com/), and some networking chutzpah, you should be able to land a job. And if you come to the Golden State and work in one of its Golden Companies hard enough and long enough to cash in your stock options, you'll have a small pot of gold in your bank account as well.

But beware. You won't stick around to cash in those options if you don't like where you work. Or if you do stick around, you'll be so full of resentment at having lost the best years of your life, you may find it impossible to enjoy your gilt-edged stocks. Pick your company wisely, pay even more careful attention to its culture, and you can enjoy the good life— both while you're there and after you move on.

High-tech companies are about more than cool technology. As we research the hot high-tech companies, we hear one thing again and again from our insider network: culture matters. Do you like competitive environments? You might want to try Oracle. Insiders say, "This is a place with lots of ambitious young people that put in very long hours and produce at a level not normally demanded of people in similar positions at other companies." Do you thrive in a highly-disciplined culture? Think about a company like Intel. "Intel is very successful, and it's also very structured, very disciplined," sources tell us. "Compared to lots of other companies in Silicon Valley, our corporate culture is pretty rigid."

continued on page 12 - See FITTING

continued from page 11

Summer Job Seminar, Career Centre:

Dates: February 10, 1998
Time: 5 pm
Location: Career Centre Seminar Room

Please pre-register at the Career Centre Information Desk

MARK YOUR CALENDARS!
Dates for the upcoming Professional Development seminars
Career Options

February 10 International Career Opportunities
March 10 Carcers in Environmental Engineering

All sessions will start at 5pm

Mentoring Evenings

An exciting opportunity to meet with engineers from a wide range of industries and at various places in their careers

Dates: Wednesday, January 20, 1999
Wednesday, February 24, 1999
Wednesday, March 24, 1999
Time: 5pm to 7:30pm
Location: GB202

Please pre-register for these evenings

New to Engineering Career Resources:

Rich's High Tech Guide - This CD-ROM lists full contact information for over 9000 companies in the Silicon Valley, California. And an electronic database of all firms in the Niagara Region where a lot of manufacturing firms are located.

We will use this database to send information to these firms and you can sign out tbis resource for your personal use.

Drop by the office to have a quick look!

Fitting The Corporate Culture

continued from page 11

Looking for a big company with a more laid-back culture? At Hewlett-Packard, "it's very informal," insiders report. "People are laid-back. You're encouraged to communicate with others and not get aggressive. They place a lot of value on consensus and teamwork. People who have transferred from other companies stand out because they get heated, or because they wear ties." Finally, if you prefer a small, loose, high-risk, and definitely tieless environment, Silicon Valley is famous for its thousands of high-tech and new-media start-ups. Depending on your tolerance for ambiguity, they could offer you your dream job, or your worst nightmare. Insiders report that "every day is different in a start-up. You have to wear several hats. You often don't know who has authority for certain projects, and you better not care. What matters is getting the work done. Everything else is secondary."

So be sure to research the cultures of the high-tech companies you're considering. Lots of firms develop cool technology, but day in and day out, it's the firm's culture that may play a more important role in whether you love or loathe your job. And stop to think about which type of cultures you will thrive in. Discovering Your Career In Business, a fascinating book by Harvard Business School's Jim Waldroop and Tim Butler, can help. Preview it at http://www.wetfeet.com/webc/wetfeet/x307.html. How you fit in is a critical piece of the puzzle when it comes to finding a job. Know thyself, said the Oracle at Delphi. (the original Oracle, not the Silicon Valley outpost of over-achieving competitors mentioned above.) It's the first step to knowing where you'll do the best work, be happiest, and live the good life on and off the job.

Good luck with your job search from your friends at WetFeet.com.

Visit www.wetfeet.com 24 hours a day to research a variety of industries. Check out free company profiles and preview our Insider Guide series.

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if you have ideas on how to fill little spaces like these, please email cannon@skule.ca

Club Reports

CHEM

Katherine Wong
CHEM 0T0
CHEM Communications Chair

The Chem Dinner Dance was a great success. Many thanks to So-Fat Productions for providing jammin' music and to the Primrose Hotel for a wonderful banquet hall. Among all the door prizes, draws, and other awards, Sivatma Maharaj (Chem 9T9) received a gift of appreciation for organizing this year's CSChE conference in London. Thank you to all who contributed to make this night special. Photos of this event will be prowided in the next issue.

Next Month: There will be a Gitoni Tournament and Smoker (TBA).

Over the next few months we will be featuring personal profiles of your Chem Club Executives. To start things off, here's a little bit of information about yours truly:

My name is Katherine Wong and I'm the 9T9 Chem Club Communications Director.

I've been writing articles for the Cannon for about three months, but I have had previous related experiences. For example, in high-school (Mary Ward CSS, Scarborough) I was the 1996 Chief Yearbook Editor. I was also the captain of the Cheerleading Team, Alto Jazz Choir Singer, Actress, Peer Counsellor and Prom Committee Organizer. I'm friendly and easy to approach, no stranger to the Chem Common Room, my second home. Starting Skule(TM) at UofT was a bit overwhelming and still is sometimes, but I've managed to find a niche, joining things such as Skule Daze, Chem Club and managing the UofT Dragon Boat team. I definitely urge everyone to participate in school events and clubs because it helps build community spirit and just makes school more fun. When was the last time a problem set has brought equivalent joy to your life... (I guess this doesn't apply to Eng Scis) But seriously, it also gives you plenty of opportunity to build on your networking skills.

Plans for the future:

Of course I will be the #1 Chemical Engineer of my time, Nobel Prize and all, but while I'm working on that, I'll probably settle into a decent, well-paying, travel abroad type of job and strive towards an MBA. Dogs, cats, picket fences - all that kind of American Dream stuff. But ultimately, I want to find a way to give back to the community, perhaps by providing more opportunity for youth to explore aspects of Science / Math / Computers / Arts, and getting involved in giving them a goal for the future.

ECE

Cristhian Golec
COMP 0T0

Hi, and welcome back to all of us. It seems that the two-week Christmas holidays were a bit too short. But with the help of the snowstorm and the Ottawa Trip, we had a bit of an extension and some more time to relax before school started.

Now school is in full effect, and the stress is starting to settle in once again. But Reading Week is around the corner, so there's no need to stress out too much...yet.

Well, I can say that the Ottawa Field Trip was a great success. Everyone had a chance to party, go to the casino (although some people spent more than they should have) and meet with some companies. Thank you to all who attended and made this trip so great. A special thanks to Shivanthini and Kanchana without whom the trip would not have happened in the first place. As for those of us that didn't go, well, we can thank Shiv and Kanch anyway for the two days off Skule™!

We are having our first smoker of the year soon so watch for future announcements. It will be in the same style as before with plenty of free food and cheap BEvERages, so come on out and have some fun with your fellow engineers.

As you may know, the Fourth Year Montreal Trip was cancelled. The club tried its hardest but what can we say we lacked the resources. Don't worry, it's not all bad news for the 4th years. The Iron Ring Party and GradBall are just around the corner.

As always, if there are any concerns, comments, or suggestions you can always drop by the club room or leave a message in our suggestion box (we're here for you!).

Also, don't forget: the common room is almost always open. You are welcome to relax on the couches or study on the tables. The microwave is also there for you to heat up your food. And of course, you can support the club by buying from our pop machine.

Canned drinks are sold at an unbelievably low price of only 55 cents and bottled drinks are a steal at only $1.15. Good luck and until next time.

More Blank space.

(see other Blank space for more info)

ENGSCI

Pierre Duez
ENG SCI 0T0
Engineering Science Club Secretary

Well, it was a busy first term, but it is finally over. As always, the number of activities going on seems to increase as an exponential as the term progresses, with the inevitable consequence that the time allowed to recover from one and prepare for the next seems to disappear all too quickly. The first term ended off with a few smokers, a Chess Challenge, and chances for everyone to be involved in Club activities.

November featured the Trivia Smoker, which also served to highlight Eng Sci's Aerospace option. Dynacon sponsored us to the tune of free pizza for all, and Aerospace students and professors were on hand to show off Aero to the young 'uns. Following on the heels of this successful event was the equally (if not more) successful Dinner Dance, organized by Eric Moncrieff. Held at The Great Hall, this dinner featured good food, great music, and a warm atmosphere for all. There was a large number of professors there, as well as many non- and former- Eng Scis. Trevor Mill's Toast to Eng Sci was very well received (a copy of this toast can be found in the current Engineering Science Newsletter, at http://www.engsci.skule.ca/).

Less than a week after this gala event, Eng Sci students were once again scrambling to organize the Engineering Chess Challenge. (Though no longer a purely Eng Sci event, it is still organized and presented by the Engineering Science Club.) Of course, students have been doing all this while being bombarded with tests, quizzes, problem sets, midterms, and the likes.

A week after this was the final event of the first term, the Winter Wünderland smoker. Once more, Eng Scis flocked to the common room to relax, enjoyed some BEvERages (yes, some Eng Scis *do* drink!), ate some pizza, and the young 'uns got a chance to learn about the Elec stream. But then it was off to exams, and a slight increase in stress for everyone...

... and suddenly it's 1999. For the 9T9s, the days remaining before you get your rings are rapidly dwindling. For everyone else, it just means yet another term to get through. But don't worry - there are plenty of Eng Sci activities going on! We've already had our first smoker, where we swapped books and talked Physics. The chariot race came and went, with great success. Coming up, on February 11, is the Valentine's day smoker. The fun never ends!

As is the nature with time, it will all pass before you realize it. What better reason could you have to relax now while you still have a chance, and take a few deep breaths before this term really kicks in?

(Who are these freaks anyways?)

MECH

Shirlie Ho
Mech 0T0
Mech Club Vice-Chair

The Mechanical & Industrial Semi-Formal was a success! Everyone had a delicious dinner and a chance to dance off those calories, too. Thanks to everyone who came out! Thanks especially to all the Professors who graced us with their presence. I'm sure it was a night that won't soon be forgotten. We hope everyone had a relaxing holiday, and wish you all the best in the new term.

MINERAL

Zach Vorvis
MIN 9T8 + PEY
Mineral Engineering Club Chair

First of all, thanks to all the dedicated (violent) Mineral students who helped out with our Chariot! This was the first chariot from our program since either the late 60s or early 70s. We had a couple injuries on our team, but they hit each other, so I guess that's ok. Anyway, it was an awesome race, and I would especially like to thank Teresa Huang who was our chariot driver. On a couple occasions during the race, she sat patiently on her side, or upside down while we all caught our breath and gathered our strength to eventually right the chariot again.

Last term ran very smoothly for the club. We had a couple of very successful smokers near the start of the year, and on November 13th we went for a night out at Hart House Farm. This was a joint event with the Geology Department, with a total of about 20 students showing up. We also had the pleasure of sharing the Farm on this occasion with the "Peace and Conflict Society".... I believe they'll be checking with whom they're sharing the Farm in the future. Hopefully they haven't booked for February 5th, because that's the next time we'll be there, and we're taking no prisoners!

The mining industry in Toronto is a very small and social one. There are numerous industry/student events held throughout the year, and these are always great to attend. First of all, there are Canadian Institute of Mining (C.I.M) luncheons every month at the Ontario Club. These are meetings which start with a lunch, and end with a speech by someone in the industry. The most important reason to attend these luncheons is to become familiar with the people who could one day (pretty soon!) be your employer, partner, lawyer, or consultant. To get info on how to attend these luncheons, contact Marisca Vanderkamp at vanderk@ecf.utoronto.ca.

There is limited space every month, so attendance is on a first-come, first-served basis. Besides these lunches, we also do other events with the C.I.M. On November 13th, we had an industry/student mixer event in the Mining Building. All the students were invited for the evening which also brought in approximately 60 industry people. Essentially we drank, and ate, and talked about mining. The event was excellently organized by Marisca Vanderkamp, Pete Bures, Jacob Hanley, and Dave Andrews.

Many students attended the C.I.M. student night dinner on January 21st, also a night of drinking, eating, and networking with the mining industry.

Other things on the go for the rest of the year are the Mining Games in Sudbury, the Prospectors and Developers Association of Canada (PDAC) convention at the Royal York, the Mineral Economics Society conference at the Sheraton Centre, and others.

That's about it for now. I'd like anyone with questions about these events to contact me at vorvis@ecf.utoronto.ca. I'll be happy to help you out.

MMS

David Elsner
MMS 9T9
MMS Club Chair

The last little while has been quite hectic for MMS students. A few months ago, Prof. Urb held a great smoker (one of the best ever) to give students an opportunity to voice their opinions on what's being done right and what's being done wrong. This has become a new annual event, giving all years the chance to voice their opinions about their education.

Throughout the month of December, the MMS Club held a food drive. The proceeds went to the Daily Bread Food Bank, which distributed the food through member agencies throughout the Greater Toronto Area. Food is sent to where the need is greatest. All the collected food was donated on behalf of the MMS Students at U of T.

Keeping us up-to-date, we may actually have a computer lab sometime soon in the new year, in the basement of Wallberg. There should be 20 new CCIE computers, complete with a dedicated server and a printer. Meetings have been held, and the room has been tentatively scheduled for completion in January. Just don't hold me to it.

Professor Profiles

Brenda McCabe

Karen Chang
EngSci 0T1

The Road To U of T...

Professor McCabe has been teaching at the University of Toronto since August of 1997. She is currently an Assistant Professor in the Department of Civil Engineering. The road that brought her here could be described by some as rather unorthodox. She attributes much of it to serendipity, and taking opportunities as they came. Her father always encouraged her to work.

"At the age of 9, I was selling chips and hot dogs at his service station. When I was 15, I would be responsible for his business when he had to leave. I was the only one on the premises able to open the vault."

"Don't be afraid to accept opportunity, and always watch that you recognize it."

These experiences instilled a sense of responsibility and work ethic in her that helped progress through life. Throughout high school, she worked for a local natural gas distribution company, and as a clerk for Greyhound bus lines.

After high school, Professor McCabe (who hails from northern Alberta) moved to Edmonton to start working. Her first position was with a small drafting firm that focused on housing. Not finding it to her liking, she sought work elsewhere. When she started at Midwest Surveys, her assignment was 2/3 junior draftsperson and 1/3 land-titles-search-person.

After 3 short months, she was drafting full time. "They were very progressive and always allowed me to challenge myself with special projects."

In the late 80s, she and her husband moved to Toronto due to a poor Albertan economy. Her husband, a self-employed tradesman, saw more opportunities to succeed here in Ontario.

"The only regret I had about leaving was my job, but the excitement of starting again was very great."

After working at a survey firm for a while, Professor McCabe realised a need for more education and decided to start her undergraduate degree here at the University of Toronto. She was extremely involved, and participated in such events as the concrete toboggan, Popsicle stick bridges, and the egg crushing.

Upon completion of her undergraduate degree she and her husband moved back to Edmonton. Once again, the economic tides carried her husband back to the oil industry.

The opportunity to do graduate work at the University of Alberta came along, and Professor McCabe seized it. It was an exciting time to join the construction program as it was expanding. Professor McCabe became involved in all its aspects, from administration to research, to meeting with industry, and developing proposals. After getting her Ph.D. she applied to work here at U of T, and the rest, as they say, is history! None of it was really planned, but was more a case of taking opportunities as the presented themselves.

U of T: As A Student, As A Professor...

Professor McCabe admitted that she was shocked when she began her undergraduate career after being in the work-force for so long. Being about 10 years older than the average first year student, she had a lot of adjusting to do as well as a lot of re-learning.

She still remembers her first class and first quiz that she wrote: linear algebra. She still shudders when she hears the words "eigenvalues" and "eigenvectors"! Having special student status, she finished her First Year over two years. This gave her time to adjust, re-learn material forgotten since high school, and get back into study mode.

After returning from the University of Alberta to teach, it felt like coming home for her. She was back with people she knew and enjoyed working with. She likened being a professor to a management job, juggling all the administrivia and paperwork, teaching, and graduate students.

On Teaching...

When asked what it was about teaching that she enjoyed so much, she replied that she wants to inspire and reach people. She is a real believer in hands-on learning.

"I believe it is important to bring the class, especially undergraduates, to construction sites to show them what it is really like. There is no substitute for the real thing." She finds it to be very challenging, as well as rewarding to be on the other side of the lecturer's stand.

McCabe wants to inspire and reach people. She is a real believer in hands-on learning.

"There is very little that can be taken for granted when trying to teach. It can be quite difficult to explain things that have become second nature. You have to remember what it was like to learn it the first time. Not only that, but you need to know several different ways to explain the concept since not everyone will learn it the same way."

Compared to industry, Professor McCabe feels there is more freedom to explore things as a professor. One is not limited by what the boss knows, what he/she need, and what he/she allow you to do. If she left teaching, she would miss this freedom most of all.

The other big difference is the number of hours involved. Although they are a lot longer now that she has joined the faculty, doing the work is fine as long as it's interesting. The amount of work really becomes irrelevant.

On Reasearch...

Professor McCabe's speciality lies in Construction Management. It deals with the management of projects in terms of money, resources, avoiding 'fails' (including sub-contractor fails), decision making, support, as well as artificial intelligence applications.

"[Construction] is the most applied area of civil engineering plus it is focused often on the human element of management."

With all the grad students in the field, it gets to be quite diverse. Her main focus is on the applications of artificial intelligence and performance evaluation techniques in construction.

One of the projects she is currently working on is developing a 'smart' tool for evaluating schedule risk. She has also been involved in the development of a parametric estimating system using artificial neural networks.

Professor McCabe is trying very hard to get industry involved in research. "Often, industry believes that they do not have anything in common with a university. I am hoping to change that."

Personal Details...

Though she claims to have no musical or artistic ability, Professor McCabe enjoys the fine arts in the little spare time that she has. She also enjoys travelling. Being married without children leaves her with more mobility to venture off to places like Columbia and Mexico.

She and her husband of 16 years are also avid sailors. She describes her relationship with her husband as "a very positive one." It takes a tremendous amount of compromise to be amenable to moving across the country not once, not twice, but THREE TIMES for each other.

"We are very much a team, and we are willing to work together. Each of us is willing to give in it if is really important to the other."

When asked if she had any final thoughts that she'd like to impart. She said, "Don't be afraid to accept opportunity, and always watch that you recognize it." It seems to me that Professor McCabe continues to live by those words. Her spirit, enthusiasm, and determination are a real inspiration, and I wish her all the best for the future.

Chasing After Comets: A Look At *Stardust*

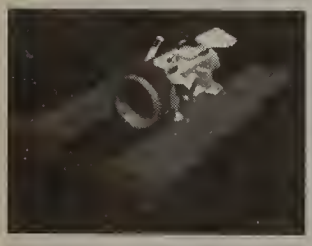
Andrew Adamson
exn.ca

Imagine sticking your head out a car window while driving slowly through a snowstorm. It's a lovely, peaceful image, isn't it?

Now imagine the snowflakes are tiny, hard and incredibly sharp and that your car is traveling not just a few kilometres an hour but at several hundred kilometres an hour.

As unpleasant as this sounds, it is exactly what the *Stardust* spacecraft has to look forward to when it passes through the tail of Comet Wild 2.

Its mission is simple: study and recover tiny particles ejected from the comet's nucleus. In a little less than seven years, this small satellite will circle the Sun three times



(once using the Earth's own gravity to propel it even faster towards its target), rendezvous with the comet, and return to Earth to drop its sample safely into an army base in Utah.

Studded with antennas, cameras, sensors and sampling equipment, *Stardust* is a deceptively simple device. Built under NASA's Discovery program — which also includes the *Mars Pathfinder Lander,* the *Near Earth Asteroid Rendezvous* and the *Lunar Prospector* orbiter — it was designed to be cheap but effective.

Compared to many other NASA deep space missions, *Stardust* is comparatively simple. There are only two dedicated science missions.

Cometary and Interstellar Dust Analyzer

Sticking out of the underside of the craft is the Cometary and Interstellar Dust Analyzer, a large, gold-coloured instrument that will collect samples of dust that have been blown off the surface of the comet. It's virtually the same instrument that traveled aboard the Giotto and Vega 1 and 2 spacecraft when they encountered the tail of Comet Halley in 1986.

Stardust's Cometary and Interstellar Dust Analyzer

This instrument is a mass spectrometer. It takes samples that have been stripped of all their electrons by a powerful electronic grid and measures how long it takes them to make it to a receptor at the end of a sharp turn at the base of the detector. The heavier an ion is, the more time it takes to make the trip. And by adding up all the times, scientists here on Earth can come up with a fairly precise picture of the atomic composition of the comet's tail.

Unfortunately, the Cometary and Interstellar Dust Analyzer can only come up with the composition of Wild 2's tail on an atomic level. To get more detailed information on what chemicals and organic matter lies in the vast cloud of dust and gas, NASA wants to bring back actual samples to be analyzed here on Earth.

Aerogel Collector

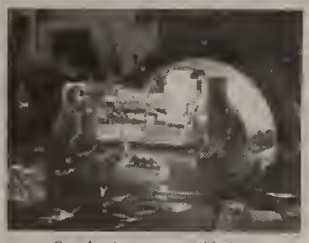
For this, *Stardust* is equipped with another device called the Aerogel Collector. From its home at the rear of the spacecraft, this honeycomb of rectangular

Aerogel is a remarkable device. It looks like cloudy glass but is surprisingly light. When you squeeze it gently between your fingers, it gives a little. But give it a big squeeze and it shatters completely. Obviously it's no good for making hammers, but it's great for catching high-speed particles. They smash through the first few centimetres of the aerogel before coming to a rest, embedded in its snug embrace.

After passing through the trail of Wild 2, the Aerogel Collector will be retracted into its protective shell. Two years later, when *Stardust* meets up with the Earth again, the capsule will be released from the spacecraft, to reenter the atmosphere it left six years earlier. With just three kilometres left to fall, a parachute will deploy and gently lower it to a final resting place somewhere in the Utah Test and Training Range, about 90 kilometres west of Salt Lake City. The aerogels will then be transported to NASA laboratories for final analysis.

Navigational Camera

To help NASA scientists see where their multi-million dollar satellite is headed, they've equipped it with a navigational camera, which will ensure *Stardust's* course takes it close enough to the comet's nucleus that it will have a



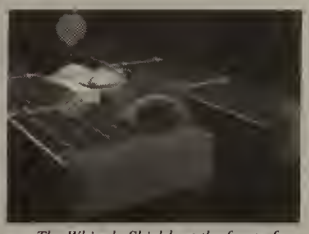
Stardust's camera will help engineers on the ground navigate and study Wild 2's nucleus.

good chance of collecting a descent amount of comet debris. Scientists also hope it will have enough of a view of the nucleus itself to build a detailed 3-dimensional model of it.

Undoubtedly, it will also capture the most dramatic pictures of a comet since the 1986 encounter with Comet Halley.

The Whipple Shields

Sending a spacecraft directly into a dense cloud of cometary particles isn't the best thing if you want to preserve a spacecraft. Tiny, high-speed particles are believed to have disabled many of communications satellites circling the Earth over the past few years. Even though they are extremely small and light, they carry the same energy as a bullet fired point-blank out of a sniper's rifle. They also each carry a strong electrical charge that can send a destructive surge through a satellite's delicate circuitry.



The Whipple Shields at the front of the spacecraft will protect it from the very particles it's meant to collect.

Thankfully for the communications industry, these tiny fragments are extremely rare. But of course NASA expects *and hopes* this mission will result in thousands of direct hits. So they've done a lot to protect their craft.

The entire leading edge of *Stardust* is made up of a thick barrier called a Whipple Shield. It acts like an extremely thick umbrella, that bears the brunt of the cometary dust without exposing any of the delicate parts of the spacecraft — such as the transmitting antenna or solar cells — to the barrage of particles. NASA expects the Whipple Shield will protect *Stardust* from debris up to one centimetre in diametre.

Teaching Old Dogs New Tricks

Beth Adams
exn.cs

Is there any truth to the saying, "You can't teach an old dog new tricks"? Although most dog owners probably have an opinion about the intelligence of their aging canine, there hasn't been a whole lot of scientific research on this subject. In fact, neuroscientist Dr. Bill Milgram from the University of Toronto is one of very few researchers in the world who can provide a truly scientific answer to this question.

For the past several years, Milgram's laboratory has been studying aging and canine cognition. His research shows that some, but not all, old dogs suffer from "cognitive dysfunction" —which resembles a doggie form of Alzheimer's disease. This means that some, but not all, old dogs can learn new tricks.

Using a range of different tasks to assess learning and memory, Milgram's laboratory has shown that old dogs fall into two distinct categories: cognitively impaired and cognitively non-impaired. Compared to young dogs and old unimpaired dogs, old dogs that are "cognitively impaired" are not able to learn new tasks easily and do not remember previously learned information very well. Apparently only 10% of old dogs in these studies can be classified as cognitively impaired. According to Milgram, cognitively impaired old dogs look and act like "normal" old dogs —they just can't remember what they learned the day before. This is very much like an elderly person who functions well on a daily basis, but who tells you the same story over and over because he or she doesn't remember telling you tbe story before.

Are there any physical signs of tbis cognitive deterioration in the brains of old dogs? Dr. Carl Cotman and his colleagues at the University of California at Irvine have found increased levels of a nerve-damaging protein called beta-amyloid in the brains of old dogs. Patients with Alzheimer's disease also show an accumulation of beta-amyloid protein in the brain. Pathological changes in the brain, like an increase in beta-amyloid, may be responsible for the cognitive deterioration associated with Alzheimer's disease in humans. There is also evidence that the degree of cognitive impairment in old dogs is related to the amount of beta-amyloid protein found in their brains. This suggests that some old dogs may develop a canine version of Alzheimer's disease. Wbat isn't clear though is why some, but not all, old dogs develop age-related brain disorders.

The good news is that researchers are trying to find ways to improve age-related cognitive problems in our four-legged, furry friends. One drug, L-deprenyl (also known as Anipryl), is currently on the market to treat canine cognitive dysfunction —but scientists and veterinarians remain rather skeptical regarding its effectiveness. More research is needed to better understand how aging affects cognitive processes in the dog brain. As it stands, you may have to wait a while before you can give your geriatric dog a "smart pill" to boost his ability to learn new tricks.

You know you wanna.

Tickets now on sale at the Engineering Stores
but only from Feb. 1 to Feb. 12!
You can get them yourself from
the Hart House Theatre Box Office afterwards,
but why bother?
Besides, you'd want to see it with your buddies
on Engineering Nite
(that's the Thursday night show)
and you want to get your tickets before they sell out.
(They do. Just ask those who thought they could
get one at the last minute.)

Tickets are $9 in advance and $10 day of the show.
(That's cheaper than a movie ticket nowadays!)
But if you feel you can't spend that much,
you can try winning a pair of tickets at the web site.
We're giving away a pair each week before the show.

And remember:
F!rosh with foresight who bought F!rosh Kits get in free.

March 10 to 12, 8:00 pm.
March 12, 2:00 pm.
Hart House Theatre

www.skulenite.skule.ca